



April 2006

Volume 1, Issue 1

Raven's Call

Inside this issue:

Mesonet Expansion Reaping Benefits	2
Cook Inlet; Breaking the Ice (or Not?)	3
The Fam Float	3
Meet and Greet	4
Kids Komer	5
Eagle Eyes - The NWS Spotter and Coop	6
When to Report Weather	6

Upcoming Events

- **Open House**
Saturday April 22
- **Weather Spotter Training**
Saturday April 22
10:30 a.m.
- **Earth Day Education and Career Fair**
Monday April 24
- **NOAA at Alaska State Fair**
Aug 24—Sept 4

Winter in Review: Measures of Performance

By Sam Albanese, Warning Coordination Meteorologist

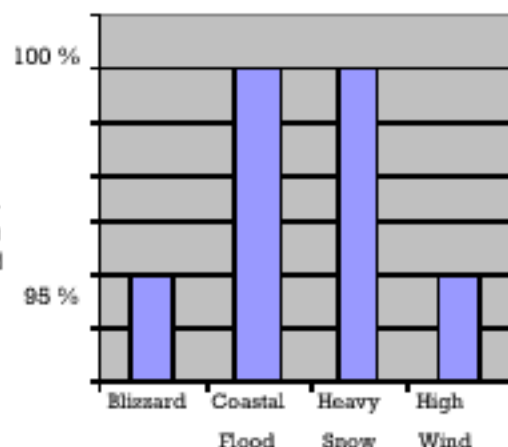
The National Weather Service issues a multitude of advisory and warning products. These are issued for weather events that cause a significant disruption to normal activities or are potentially life threatening or can cause significant property damage.

We evaluate our performance in the public warning program by defining our false alarm ratio (FAR), probability of detection (POD), and lead time (LT). FAR is the ratio of the number of warnings or advisories issued compared to the number of these warnings or advisories that met the prescribed criteria. It is important that this ratio remain below 20% to ensure we don't create the "cry wolf syndrome". A POD value of 100% means we did not miss any warning events. The more lead time the forecasters provide to the public for each event, the better.

An advisory is a significant weather event that is not immediately life threatening likely to cause excessive damage. A warning, however, could have immediate consequence to lives and property and poses a greater threat to the public.

Over the 2005-2006 winter storm season, the Anchorage forecast office had a total of 60 warning events from October 1st through March 24 and 70 advisory level events from November 1st through March 24. Overall, our performance for the warning and advisory programs were nearly identical. We had a FAR of 21% for warnings and a FAR of 25% for advisories while POD for warnings and advisories was 97%. These statistics are admirable and indicate forecasters generally performed well in these programs.

Statistics do not always present a clear picture. Forecasters excelled during wind events, yet struggled in the area of snowfall and ice related warnings and advisories. This is buried in the statistics as a whole, but jumps out when taken separately. While the sampling is small for heavy snow warnings (only 1 heavy snow event occurred, and we issued two warn-



2005-2006 Winter Season
Probabilities of Detection (PODs)

ings), we can learn from our heavy snow advisory statistics. We had a total of 17 verified snow advisory events with a highly commendable lead time of 7.7 hours on average. However, we issued a total of 31 advisories resulting in an undesirable FAR of 48%.

This is where our spotter network can help improve our service to the public. Many of these false alarms occurred due to the uncertainty of how much snow had already fallen. Some false alarms could have been avoided if we had more information, i.e. regional temperatures, snowfall rates, start and end times. Information from our spotters when snow begins to fall is critical to help us determine the potential for heavy snow for the event. I encourage our volunteer spotters to take a more proactive approach and submit spotter reports when the snow begins and periodically during the event to help forecasters determine the rate of fall, expected duration, and total accumulation.

(continued on page 2)

Winter in Review: Continued



Another area we struggled with was the freezing rain advisory program. We had 19 verified freezing rain advisory events. Our FAR was good with regard to freezing rain advisories, but we struggled with our lead time. Of the 19 freezing rain events that did occur, we had no LT for 15 of these. Two events had 1.5 hours of LT while the other two events had 10 and 17 hours of LT. This is an area where our spotters can also contribute to improve our service. Freezing rain occurs when super cooled water droplets fall from a layer of air above 32° F into a layer beneath it that is below freezing. Reports of rain from spotters that live at higher elevations can alert us to the potential for freezing rain beneath the warm layer.

Mesonet Expansion Reaping Benefits

By Andy Brown, General Forecaster

The Mesonet was established in the Anchorage area to supplement an already established network of weather stations located at airports. It consists of a network of weather stations provided by local businesses, fire stations, schools, and private homes. These automated observations are essential to forecasters at the National Weather Service Anchorage Forecast Office, provide a service to the community, as well as offer a unique educational tool to area schools.

The obvious benefits from the Mesonet are evident at the NWS Anchorage Forecast Office every day. Meteorologists are on duty 24 hours a day monitoring weather conditions over our 640,000 square mile forecast area. The Mesonet is an essential part of the local weather watch. Forecasters utilize the network to add understanding to the very complex local weather patterns. Although Anchorage has four airports that report

local conditions, the additional weather observations located at area schools, businesses, and private homes help forecasters understand micro scale conditions such as the Turnagain Arm and hillside wind as well as localized cold pockets on clear, calm, winter nights. This knowledge serves as a foundation to making a more accurate forecast taking into account these local effects.

As the Mesonet has expanded to the MatSu Valley and the Kenai Peninsula so has its many uses. In the past, the network of stations in the MatSu Valley has provided state and local agencies critical data regarding the fire potential during the summer months. Two weather elements that are essential to an accurate fire weather forecast are relative humidity and wind measurements. Local observations with these elements provided by the Mesonet will ensure the proper agencies can monitor the potential hazard for the surround-



Anchorage Forecast Area

If you would like to join our Mesonet or find out how you can help, please email Andrew.Brown@noaa.gov

ing communities. This information will continue to be invaluable to time critical decisions regarding the fire hazard.

Finally, the benefit to schools is one of the most important reasons the Mesonet exists and the reason why I became involved with this program. Educators can use the data collected from their stations or sites close by as an educational tool for students. Different elements can be graphed to depict seasonal or diurnal changes and can add valuable visual aids to an educator's lesson plan.

The Mesonet website can be found at <http://pafc.arh.noaa.gov/mesonet.php>. Besides expanding our network to other regions, a graphical display of the network will soon be available for quick reference.

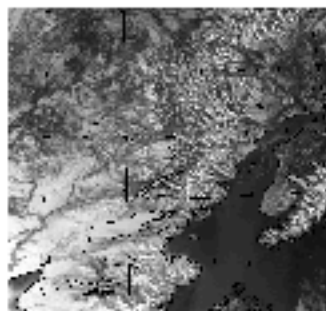
Cook Inlet: Breaking the Ice (or not?)

By Kathleen Cole, Ice Forecaster

The Anchorage Forecast Office maintains continuous records for ice in Cook Inlet dating back to 1989. Looking back on all those years, the winter of 2005-2006 has been quite a remarkable ice year. At no time since 1990 has ice been as far south so late in the season in Cook Inlet.

Ice analyses are made using satellite images, ship reports (often recently including digital pictures), land based ice observations, aircraft based ice observations, and in the past few years the addition of SAR images. SAR, Synthetic Aperture Radar, is a polar orbiting satellite sensor that is particularly useful in seeing sea ice through clouds. An ice analysis includes location, percent of coverage, thickness, and type or behavior of the ice where applicable. Analyses continue into the spring until the inlet is free of ice.

Reference points must be set to quantify the extent of ice coverage. The obvious points or areas of delineation in Cook Inlet are Knik and Turnagain Arms, the Forelands, Kalgil Island and Anchor Point. The length of time the ice remains in the inlet during the season is also necessary for quan-



Cook Inlet Visible
Satellite Mar 15

tification.

During the first week of April 2006 the ice in Cook Inlet was analyzed 10 nautical miles south of Kalgil Island with a concentration south of the Forelands between 40 and 60 percent. In our records only in 1989 did the ice extent exceed that of 2006 in both coverage and concentra-

tion. By the second week of April, 1989 falls behind the coverage of ice in Cook Inlet for 2006.

Other years that have ice coverage greater than 10 percent south of Kalgil Island in April include 1990, 1991, 1994, and 1995. 1994 is interesting in that the coverage of ice in Cook Inlet the first week of that April is quite similar to the first week of April 2006. However, ice remaining in the inlet the second week of April is greater in 2006 than 1994.

So, when will

the waters of Cook Inlet be free of ice? The last ice analysis of 1994 was the 14th of April. The last ice analysis of 1989 was the 13th of April. The only year in our records where ice was analyzed in Cook Inlet into May is 2002. Looking more closely at 2002, there is more ice analyzed in northern Cook Inlet in early April, but far less ice south of the Forelands. For Anchorage, February and March 2002 were on average colder than in 2006. At the same time in 2002, several record high temperatures were set in Kenai, which has not been the case this year. Due to these variations 2002 does not seem a good year to pattern 2006 after. Looking through the records most often ice in any concentration greater than 10 percent is out of Cook Inlet by the third week in April. My forecast for the end of the 2005-2006 Cook Inlet ice season is around the 19th of April.

Did the forecast verify? Look for the Fall/Winter

Newsletter in October 2006!

The Fam Float

By Andy Brown, General Forecaster

The Horizon Anchorage shoved off early Monday morning from the Anchorage harbor about a month ago. The freighter was en route to Kodiak and then Tacoma, Washington and would return to Anchorage a week later for what appeared to be a normal spring trip. This freighter carried more than just cargo and the usual crew of about 25 souls; it also included two young forecasters, Scott McKim and myself, from the National Weather Service in Anchorage.



The Horizon Anchorage coming
into port

The term "Fam Float" will help you understand why the crew of the Horizon Anchorage would welcome visitors for an 8 day tour. Fam floats, short for

familiarization floats, were designed to help forecasters become more familiar with the surroundings as well as gain perspective on how clients utilize our products. It is simply a way for the up-and-coming forecasters to tag along and experience first hand the complex terrain along the Alaskan coast. Like any business, it is essential to be in communication with the people that use your products to insure you are providing an effective service. Fishermen, freighters, and marine enthusiasts are all a part of the crowd that uses our forecasts. Trips such as these help maintain a healthy relationship between the marine community

(continued on page 4)

The Fam Float continued

munity and the forecasters.

I woke up late Monday morning to the vibration of the engines churning us a path through the ice covered Cook Inlet. It was the first of 8 days at sea, an educational experience I won't soon forget. The crew went above and beyond making the two of us feel welcome, taking care of our every need. We were eager to learn



Scott keeping his eye on the horizon

from them and in turn share with them some of our knowledge about the weather. In the end, both parties took full advantage of the time together and came away with mutual respect for each other's profession.

If I can sum up our trip with one thought, it was made apparent to me during a conversation with an engineer at lunch. As someone who doesn't directly use our forecasts, he was still interested in why we would subject ourselves to 25 foot seas and conditions that were out of our comfort zone. I explained our purpose the best I could. I tried to convey my desire to better understand their needs through personal experience so I would understand the impact of future forecasts. He pondered this for a while and said with an approv-



Scott and Andy practicing safety in their survival suits

ing nod, "You can always tell a machine that was designed by somebody who isn't going to use it". I thought this was a profound statement that summed up our week perfectly and also displayed his approval for our invasion.

Meet and Greet Your Local Weather Service

Retirements:

Russ Page, Ice Forecaster

In 1994 Russ took over the reigns of the NWS Ice Forecaster position in Anchorage. Over the next 12 years Russ earned a great deal of respect from peers, colleagues, and clients for his abilities as an ice analyst and forecaster. His distinguished career culminated with the awarding of the Department of Commerce Gold Medal in late 2005.

Transfers:

Joel Curtis, Lead Forecaster, was promoted to Warning Coordination Meteorologist in Juneau, AK

New Arrivals:

Thong "Tom" Dang (Intern) - Completed B.S. degree at University of Kansas. Tom is new to the NWS.

Scott McKim (Intern) - A recent Master's candidate at Colorado State, Scott returned to Anchorage early last winter. Previously he had worked as a summer hire for the River Forecast Center.

Lisa Reed (General Forecaster) - Promoted from Honolulu Forecast Office. Previously worked at Tucson WFO as a student intern. Lisa wanted to gain more experience in snow and winter weather forecasting.



Russ Page and Bob Hopkins (MFC) at Russ's retirement party

Jeff Wood (General Forecaster) - Promoted from Marquette Forecast Office.

Kathleen Cole (Ice Forecaster) - General Forecaster and fill-in Ice Forecaster in Anchorage since 1995. Hopes to transition the ice desk into the digital and GIS era.

KIDS CORNER

We'd like the youngsters to start practicing weather safety as soon as they can! Since summer is a great time to expose them to the outdoors with camping, have them learn these important weather safety tips!



Summer Camping!



WEATHER SAFETY TIPS:

- If the weather calls for heavy rain or thunderstorms, stay home
- Pick a campsite on higher ground in case of flooding
- Keep an eye out for rain nearby or upstream from where you are
- Bring a battery powered radio to hear of any dangers coming
- Take shelter immediately if hail starts falling
- If lightning is present:
 - Get inside a hard-topped car if possible
 - move away from anything metal
 - move to lower elevations
 - get out of boats and water



ALASKA SUMMER WEATHER WORDSEARCH

FIND AND CIRCLE THE WORDS BELOW!

Thunderstorm

Rain

Hail

Cloudy

Lightning

Wind

Sunny

Flood

T	R	K	L	I	G	H	T	N	I	N	G
L	H	S	H	V	R	A	J	O	P	M	O
H	F	U	T	S	W	I	N	D	N	L	R
O	T	N	N	V	O	N	S	L	B	F	U
I	G	N	J	D	Y	C	L	O	U	D	Y
K	O	Y	M	Q	E	V	J	D	I	F	J
P	C	B	K	E	I	R	D	W	H	L	O
U	B	W	S	V	R	A	S	L	E	C	I
Y	E	H	K	I	F	I	M	T	L	G	O
L	F	A	N	F	T	N	C	W	O	D	R
M	A	I	C	B	E	U	L	R	I	R	X
A	F	L	O	O	D	W	B	Y	D	Q	M

When should you submit or call in spotter reports?

- Wind greater than 40 mph.
- Wind damage to trees buildings or property.
- Snow fall total at the end of an event if it is greater than 4 inches.
- The start of freezing rain. This is rain that is falling and freezing on surfaces forming a glaze.
- The amount of glaze or ice accumulation.
- Rivers or creeks approaching bank full or overflowing their banks.
- Blizzard conditions. Snow falling with wind of 35 mph or greater frequently reducing the visibility to less than ¼ mile.
- Severe thunderstorms. These are thunderstorms with ¾ inch (dime size) or greater hail and or wind gusts equal to or greater than 58 mph.
- Tornadoes, dust devils, or water spouts
- Heavy freezing spray
- Any current conditions that are not covered in the forecast

Public Desk: 907-266-5105

On-line at http://pafc.arh.noaa.gov/spotter_submit.php

Eagle Eyes - National Weather Service Spotter and COOP Observer Programs

By David Vanderheide

Mrs. Natalie Norris has a claim to fame in that she is old enough to remember the dogs that pulled the original serum run sled to Nome in January, 1925. She was just a child at the time.

We all can recall that the lead dog was Balto and second was Togo. A lesser-known husky on that team was Fritz. Fritz's descendents, now close

to a hundred dogs, reside in a kennel known as Howling Dog Farm, which is run by Mrs. Norris and other helpers. Howling Dog is at White's Crossing at mile 66 of the Park's Highway.

Natalie and her husband Earl became NWS cooperative weather observers in August 1976. Their site consisted of the standard eight inch rain gauge, and a Cotton Region shelter with maximum and minimum thermometers

mounted inside. Mr. Morris passed away in 2001, and since then Natalie has faithfully taken the weather observations each day.

In 2005 she was presented with a 30-year Individual Length of Service Award from the NWS.

If you would like to become an official spotter, contact Renee Wise at

renee.wise@noaa.gov

For more information go to

<http://pafc.arh.noaa.gov/spotter.htm>.

Call to Spotters

By Renee Wise

Over the next few months, we will be updating our spotter database. An NWS representative will call all currently listed spotters to confirm contact information including mailing address, phone number, email address, and home location.

The Anchorage office is implementing a HAM program in conjunction with the local HAM Radio Club. As we update our files, we will be requesting HAM call signs, as well. We hope to include more spotters from outlying regions such as the Kuskokwim Valley and Copper River Valley through HAM.

Upon completion of the database update, we will move into the digital age and create a graphical display of spotter locations on high resolution topographical maps. This will greatly enhance the forecaster's ability to recognize local effects and other geographical impacts on reported weather conditions.